The Impact of Reclamation for a Sustainable Infrastructural Development on Food Security in Umuahia Urban Using Geo-Spatial Technology

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SUMMARY

The concept of reclamation exists from creation. The existence of man on earth surface requires three necessities in life which are food, shelter and cloth. The need to acquire these necessities is in the increase in both developed and developing economies. These often determine urban trends, expansion and development as these necessities lead to increase in agriculture evolution and mechanization, technology, skill acquisition and industrialisation. However, in order to meet human need and demand, land clearance and reclamation becomes the only practical options to satisfy the demands for a sustainable infrastructural development. Land can also be reclaimed from farm lands (wet land, swamp, eroded surfaces cause by agent of denudation) and natural areas to a form a suitable land for urban and industrial development. It is predicted that in the near future, large island, communities made up of cities will be establish or can be constructed in this coastal area involving dredging and dumping of millions of tonnes of material, especially with the current world population of 7.6 billion that is expected to reach 8.6 billion in 2030, 9.8 billion in 2050 and 11.2 billion in 2100, according to a new United Nations report. From UN report, roughly 83 million people are added to the world population every year. The upward trend in population size is expected to continue despite decline in fertility levels. With this comprehensive review of global demographic trends and prospects for the future land reclamation become big flourishing business. Land reclamation is seen as a good way to accommodate growing population, as well as a way of boosting economic development. Umuahia urban and its environs is not left out in this new global business trend as the central market and some housing estate lands has been cleared and reclaimed extensively to meet the demands for housing development from swamps to support the growing population that the capital has been experiencing from the time of the creation of Abia State since August 27th 1991. With aid of geo-spatial technology (Global Position System, Remote Sensing techniques, Geographic Information System, digital mapping and database creation), there is brighter prospects for a sustainable housing development initiatives without alteration of the

ecosystem.

This research aimed at evaluating the impact of reclamation for a sustainable infrastructural development on food security in Umuahia urban using geo-spatial technology. The investigation was done by assessing the radical changes in development expansion and growth as a result of reclamation. It also examines the effects of spatial disintegration and rapid urbanization and encroachment into the agricultural land in Umuahia urban and its environs. It also includes the detail assessment of geology, relief, rainfall and soil description and its impact on the environment especially on the development project site. The objectives include the creation of database of recent development projects, evaluating the environmental impact of this project in relation to the ecological and environmentalalteration that associate such project upon completion. The dataset includes base map obtained from ministry of lands and survey Umuahia, population data from National Population Commission. Quickbird satellite imagery 0.5 meters resolution (with an update from google earth 2017)and Niger-sat 2007 with 32 meters resolution was used in the analysis of the land use/land cover and buildings, digital elevation model (DEM) to obtain slope, aspect and contour, soil, vegetation, land cover, relief and geology map of Umuahia. Data processing involved scanning, geo-referencing, digitizing and land use analysis using supervised classification in ERDAS IMAGINE 9.2. The results obtained include digital database creation of housing estates (attribute table) which revealed the present condition of houses and land use and land cover in the urban city. The snap shot that show the present reclaim area and its effect on the environment. In order to create the sustainable land reclamation with the geo-spatial technology, data generated on vegetation, land cover, soils, geology and hydro-geology on the study area can be effectively used in conjunction with ground information in GIS environment to create and analyse geo-database to show that reclamation for a sustainable infrastructural development has a great impact on food security of the teeming populace of Umuahia and its environs. This is in line with the global agenda for sustainable development 2030 as expunged by FAO in Rome, 2018.